Thursday 04/20/23

1 a.

1 this is because there is no possible point in time that 1 will be smaller than some multiple constant multiple of 2 and since none is always larger it grows faster

b. 1 this is because there is a point in time where a multiple of 1 is greater than 2 so then therefore 1 grows faster.

C. 1 this is because there is no point where some constant multiple of 2 is greater than 1 the inverse rather is true the 1 is always greater than 2 after a certain point

2. a.

$$\log_2(x) = 8$$
$$\log_2 x = 8 \log_2 2$$
$$\log_2 x = \log_2 2^8$$
$$2^{\log_2 x} = 2^{\log_2 2^8}$$
$$x = 2^8$$

b.

$$\log_5(x) = \log_5 2 + 25$$
$$\log_5(x) - \log_5(2) = \log_5 5^{25}$$
$$\log_5 \frac{x}{2} = \log_5 5^{25}$$
$$5^{\log_5 \frac{x}{2}} = 5^{\log_5 5^{25}}$$
$$\frac{x}{2} = 5^{25}$$
$$x = 2 \cdot 5^{25}$$

c.

$$x = \log_4(32)$$
$$x = \log_4(32)$$
$$x = \frac{\log_2 32}{\log_2 4}$$
$$x = \frac{\log_2 2^5}{\log_2 2^2}$$
$$x = \frac{5}{2} //$$

3. greetings = ["howdy", "Hello", "Hey"]
This is because we initialize greetings = ["Hi", "Hello", "Hey"]. we then call the change function that automatically changes the 0th term (first term) to "howdy" of the argument array.